What we claim is:

1. A wireless LAN comprising a plurality of hub transceivers each connected together to constitute a data source and/or destination, and a plurality of mobile transceivers each able to communicate by radio transmissions with any one(s) of said hub transceivers within a predetermined range, wherein each of said mobile transceivers are connectable to, and able to be powered by, a corresponding portable electronic device with computational ability, said radio transmissions have a frequency in excess of 10 GHz, and all the transceivers are configured to receive and transmit in a multipath transmission environment, the reciprocal of the information bit rate of said transceiver's transmission being short relative to the time delay differences between significant ones of the transmission paths of said multipath transmission environment.

2. A peer-to-peer wireless LAN having a plurality of mobile transceivers each able to communicate by radio transmissions with any other like transceiver within a predetermined range, wherein each of said mobile transceivers are connectable to, and able to be powered by, a corresponding portable electronic device with computational ability, said radio transmissions have a frequency in excess of 10 GHz, and all the transceiver's transmission are configured to receive and transmit in a multipath transmission environment, the reciprocal of the information bit rate of said transceivers being short relative to the time delay differences between significant ones of the transmission paths of said multipath transmission environment.

3. The LAN as claimed in claim 1 , wherein the transmission is enhanced by the use of one or more of the techniques selected from the group of techniques consisting of: interactive channel sounding; forward error correction with redundancy sufficient for non-interactive connection; modulation with redundancy sufficient for interactive error correction by re-transmission of at least selected data; and the choice of allocation of data between channels.

4. The LAN as claimed in claim 3, wherein the transmission is divided into small packets of data each of which is transmitted over a time period in which the transmission characteristics over said predetermined range are relatively constant.

5. The LAN as claimed in claim 1, wherein the coding of data is carried out on an ensemble of carriers each of a different frequency.

6. The LAN as claimed in claim 5, wherein the modulation of each individual carrier is multi-level modulation of carrier amplitude and/or phase (mQAM).

7. The LAN as claimed in claim 6, wherein said mQAM is form the modulation family consisting of: amplitude shift keying (ASK), multi-level ASK (mASK); permutation modulation; binary phase shift keying (BPSK); multi-level phase shift keying (mPSK); amplitude phase keying (APK); and multi-level APK (mAPK).

8. A method of transmitting data between at least one hub transceiver and a plurality of mobile transceivers within a predetermined cell range or between said mobile transceivers, wherein said data transmission is a multipath transmission having a frequency in excess of 10GHz, each said mobile transceiver is connected to, and is powered by, a corresponding portable electronic device with computational ability, and the reciprocal of the information bit rate of said transmissions is short relative to the time delay differences between significant ones of the transmission paths of said multipath transmission environment.

9. The method as claimed in claim 8, wherein the transmission is enhanced by the use of one or more of the techniques selected from the group of techniques consisting of: interactive channel sounding; forward error correction with redundancy sufficient for non-interactive connection; modulation with redundancy sufficient for interactive error correction by re-transmission of at least selected data; and the choice of allocation of data between channels.

10. The method as claimed in claim 9, wherein the transmission is divided into small packets of data each of which is transmitted over a time period in which the transmission characteristics over said predetermined range are relatively constant.

11. The method as claimed in claim 8, wherein the coding of data is carried out on an ensemble of carriers each of a different frequency.

12. The method as claimed in claim 11, wherein the modulation of each individual carrier is multi-level modulation of carrier amplitude and/or phase (mQAM).

13. The method as claimed in claim 12, wherein said mQAM is form the modulation family consisting of: amplitude shift keying (ASK), multi-level ASK (mASK); permutation modulation; binary phase shift keying (BPSK); multi-level phase shift keying (mPSK); amplitude phase keying (APK); and multi-level APK (mAPK).

14. A wireless transceiver operable to transmit and receive radio transmissions having a frequency in excess of 10GHz in a multipath transmission environment in which the reciprocal of the information bit rate of the trasnceiver's transmission is short relative to the time delay differences between significant ones of the transmission paths of said multipath transmission environment.

15. The transceiver as claimed in claim 14, wherein the transmission is by means of modulation of an ensemble of carriers.

16. The transceiver as claimed in claim 15, wherein the transceiver has a modulation/demodulation system which incorporates fast Fourier transform devices and inverse fast Fourier transform devices for the generation and detection of said modulation of an ensemble of carriers.

17. The LAN as claimed in claim 2, wherein the transmission is enhanced by the use of one or more of the techniques selected from the group of techniques consisting of: interactive channel sounding; forward error correction with redundancy sufficient for non-interactive connection; modulation with redundancy sufficient for interactive error correction by re-transmission of at least selected data; and the choice of allocation of data between channels.

18. The LAN as claimed in claim 17, wherein the transmission is divided into small packets of data each of which is transmitted over a time period in which the transmission characteristics over said predetermined range are relatively constant.

19. The LAN as claimed in claim 2, wherein the coding of data is carried out on an ensemble of carriers each of a different frequency.

20. The LAN as claimed in claim 19, wherein the modulation of each individual carrier is multi-level modulation of carrier amplitude and/or phase (mQAM).

21. The LAN as claimed in claim 20, wherein said mQAM is from the modulation family consisting of: amplitude shift keying (ASK), multi-level ASK (mASK); permutation modulation; binary phase shift keying (BPSK); multi-level phase shift keying (mPSK); amplitude phase keying (APK); and multi-level APK (mAPK).

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